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## ELECTRON-CAPTURE-DELAYED FISSION IN $^{232}\text{Am}$

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Actinide nuclei near the proton dripline have large electron capture  $Q$ -values ( $Q_{\text{EC}}$ ) that can populate states in the daughter nucleus up to  $Q_{\text{EC}}$ . Delayed fission can occur in the daughter nucleus and may be important in the astrophysical  $r$ -process. Thus electron-capture-delayed fission (ECDF) allows us to study fission in neutron-deficient nuclei at excitation energies comparable to the fission barrier height. The ECDF branch of  $^{232}\text{Am}$  is  $(6.9 \pm 1.0) \times 10^{-4}$ .

During an 80-hour experiment  $^{232}\text{Am}$  was produced at the Lawrence Berkeley National Laboratory 88-Inch Cyclotron in the  $^{237}\text{Np}(^3\text{He}, 8n)$  reaction using a stack of 10 thin ( $124\text{--}197\text{ }\mu\text{g}/\text{cm}^2$  each) targets at a beam energy of 75 MeV incident on the first target. Recoiling activities were collected and transported to a “Sample Changer” that moved samples into Gammasphere for analysis. The latest results on ECDF in this nuclide and rotational structure in the electron capture daughter  $^{232}\text{Pu}$  will be discussed. These experiments show the promise of using Gammasphere to study nuclei that would otherwise be inaccessible due to the need for radioactive targets or pre-separation in the Berkeley Gas-Filled Separator.

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